

## ABSTRACT OF THE DISCLOSURE

**[0065]** Methods and systems are provided for automatic optimization for ultrasound medical imaging. In one approach, velocity values are unwrapped to avoid aliasing artifacts. Multi-dimensional phase unwrapping is applied to the velocity data. The unwrapped velocity information is used to optimize one or both of the velocity scale (e.g., pulse repetition frequency) and the imaging frequency. For optimizing the scale setting, the distribution of unwrapped velocities from a systolic time period of the heart cycle are used to identify the pulse repetition frequency. For optimizing the imaging frequency, a correlation as a function of depth shows the penetration depth for a given imaging frequency. In a dependent or independent approach, one or more thresholds for velocity or energy in flow imaging are adaptively selected as a function of an amount of clutter. Velocity or other energy information in addition to the clutter information may be used for selecting the thresholds. In yet another dependent or independent approach, displacement of an imaging plane or other change is detected and used to trigger an automatic update of an imaging parameter for a same or different mode.